

**Figure 1: Verification of differential expression
of human DAX-1 by quantitative RT-PCR**

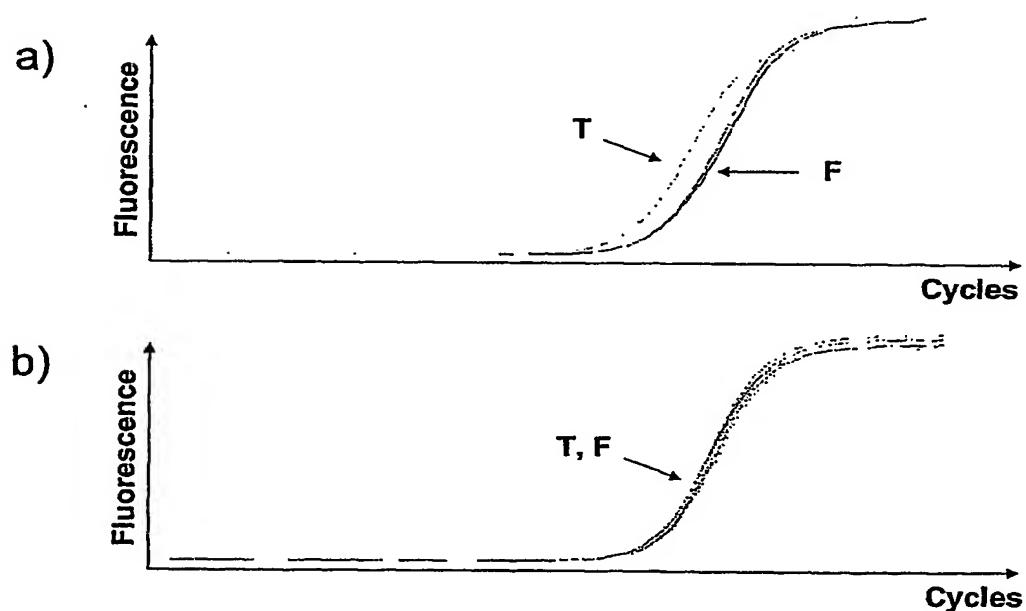


Figure 2: Verification of differential expression of human DAX-1 by quantitative RT-PCR

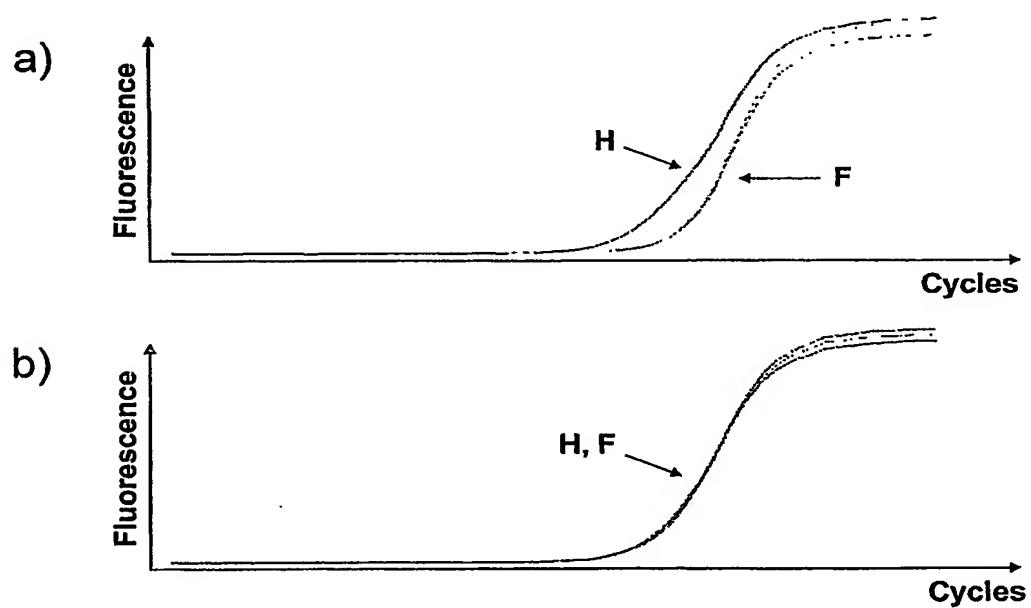


Figure 3: Analysis of absolute mRNA expression of DAX-1

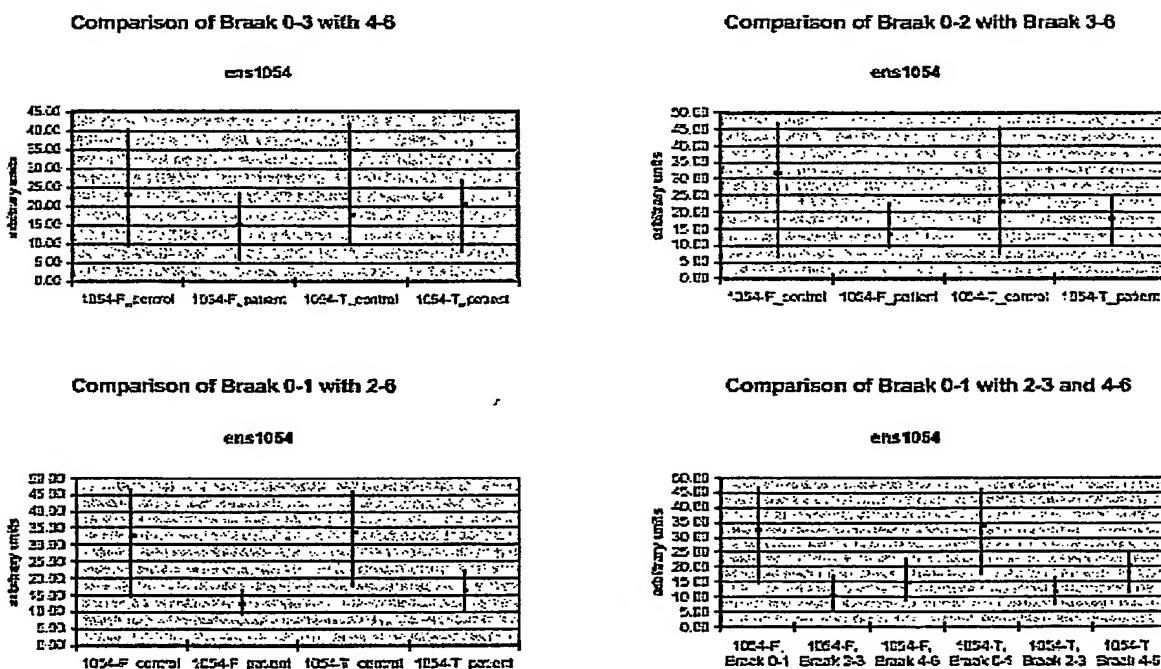


Figure 4: SEQ ID NO. 1: amino acid sequence of human DAX-1 protein

Length: 470 aa

```
1 MAGENHQWQG SILYNMLMSA KQTRAAPEAP ETRLVDQCWG CSCGDEPGVG
51 REGLLGGRNV ALLYRCCFCG KDHPHQGSIL YSMLTSAKQT YAAPKAPEAT
101 LGPCWGCSCG SDPGVGRAGL PGGRPVALLY RCCFCGEDHP RQGSILYSLL
151 TSSKQTHVAP AAPEARPGGA WWDRSYFAQR PGGKEALPGG RATALLYRCC
201 FCGEDHPQQG STLYCVPTST NQAQAAPEER PRAPWWDTSS GALRPVALKS
251 PQVVCEAASA GLLKTLRFVK YLPCFQVLPL DQQLVLVRNC WASLLMLELA
301 QDRLQFETVE VSEPSMLQKI LTTRRRETEGG NEPLPVPTLQ HHLAPPALAR
351 KVPSASQVQA IKCFLSKCWS LNISTKEYAY LKGTVLFNPD VPGLQCVKYI
401 QGLQWGTQQI LSEHTRMTHQ GPHDRFIELN STLFLLRFIN ANVIAELFFR
451 PIIGTVSMDD MMLEMLCTKI
```

Figure 5: SEQ ID NO. 2: human DAX-1 cDNA nucleotide sequence

Length: 2022 bp

```

1   GAGCTCCCAC GCTGCTGTTT TTCCATTTC AGCTTTAAA GAGCACCCGC
51  CCCTTCGAAC CACCGAGGTC ATGGGCGAAC ACACCGGGAGC GCAGACCGCG
101 CCCCCCCCGCA CACACCGGCC GCCTCCCGCGC CCTTGCCCCAG ACCGAGGCAGG
151 CCGACGCGCC TGCGTGCAGCG CTAGGTATAA ATAGGTCCCA GGAGGCAGGCC
201 ACTGGGCAGA ACTGGGCTAC GGGCGCCCG GCATGGCG GGCGAGAAC
251 ACCAGTGGCA GGGCAGCATC CTCTACAAACA TGCTTATGAG CGCGAAGCAA
301 ACGCGCGCGG CTCCTGAGGC TCCAGAGACG CGGCTGGTGG ATCAGTGTG
351 GGGCTGTTCG TGCAGCGATG AGCCCCGGGT GGGCAGAGAG GGGCTGCTGG
401 GCGGGCGGAA CGTGGCGCTC CTGTACCGCT GCTGCTTTG CGGTAAAGAC
451 CACCCACGGC AGGGCAGCAT CCTCTACAGC ATGCTGACGA GCGCAAAGCA
501 AACGTACGCG GCACCGAAGG CGCCCGAGGC GACGCTGGGT CCGTGCTGGG
551 GCTGTTCGTG CGGCTCTGAT CCCGGGGTGG GCAGAGCGGG GCTTCCGGGT
601 GGGCGGCCCG TGGCACTCCT GTACCGCTGC TGCTTTGTG GTGAAGACCA
651 CCCCGGGCAG GGCAGCATCC TCTACAGCTT GCTCACTAGC TCAAAGCAA
701 CGCACGTGGC TCCGGCAGCG CCCGAGGCAC GCCCAGGGGG CGCGTGGTGG
751 GACCGCTCCT ACTTCGCGCA GAGGCCAGGG GTAAAGAGG CGCTACCAGG
801 CGGGCGGGCC ACGGCGCTTC TGTACCGCTG CTGCTTTG GGTGAAGACC
851 ACCCGCAGCA GGGCAGCACC CTCTACTGCG TGCCCCACGAG CACAAATCAA
901 GCGCAGGCGG CTCCGGAGGA GCGGCCAGGG GCCCCCTGGT GGGACACCTC
951 CTCTGGTGCG CTGCGGCCGG TGGCGCTCAA GAGTCCACAG GTGGTCTGCG
1001 AGGCAGCCTC AGCGGGCCTG TTGAAGACGC TGCGCTTCGT CAAGTACTTG
1051 CCCTGCTTCC AGGTGCTGCC CCTGGACCAAG CAGCTGGTGC TGGTGCGCAA
1101 CTGCTGGCG TCCCTGCTCA TGCTTGAGCT GGCCCAGGAC CGCTTGCAGT
1151 TCGAGACTGT GGAAGTCTCG GAGCCCAGCA TGCTGCAGAA GATCCTCACC
1201 ACCAGGCGGC GGGAGACCGG GGGCAACGAG CCACCTGCCG TGCCCACGCT
1251 GCAGCACCAT TTGGCACCGC CGGCGGAGGC CAGGAAGGTG CCCTCCGCCT
1301 CCCAGGTCCA AGCCATCAAG TGCTTTCTT CCAAATGCTG GAGTCTGAAC
1351 ATCAGTACCA AGGAGTACGC CTACCTCAAG GGGACCGTGC TCTTAACCC
1401 GGACGTGCGG GGCCGTGCACT GCGTGAAGTA CATTCAAGGGA CTCCAGTGGG
1451 GAACTCAGCA AATACTCACT GAACACACCA GGATGACGCA CCAAGGGCCC
1501 CATGACAGAT TCATCGAACT TAATAGTACC TTTTCCCTGC TGAGATTCA
1551 CAATGCCAAT GTCATTGCTG AACTGTTCTT CAGGCCCATC ATCGGCACAG
1601 TCAGCATGGA TGATATGATG CTGGAAATGC TCTGTACAAA GATATAAAGT
1651 CATGTGGGCC ACACAAAGTC AGTAGTGCAG TTCACCATGA GGGAAAGAATA
1701 AAGAGCTGTG GGCAAAAGAG TGTAAAATAT TTTAAAATAA ACTTTCTTAA
1751 TATTTTACA TGCAGAGTAT TTTGATCTTC ATTAAAGAA ATAATTTAT
1801 TCCCAGCACA GTCACAAATT TCTCTGTTCC ATAGTTAAAG AAGACATTG
1851 CCAACAGGTA GCATAGCTCT GTACATCTT TAAAAAAATG ATCGCAGGGT
1901 ACTAGTATAA TAAGCTATT TCACAAAGCGC AGCAATTCA TGGAACCTGC
1951 TCAAATCAAA TTTGTACATA TTGTTATAAT AAATTTAAG GTCTTAACCA
2001 TTAACCTGAT TGAAAAAAGC TT

```

Figure 6: SEQ ID NO. 3: nucleotide sequence of human DAX-1 coding sequence

Length: 1413 bp

```
1 ATGGCGGGCG AGAACCAACCA GTGGCAGGGC AGCATCCTCT ACAACATGCT
51 TATGAGCGCG AAGCAAACGC GCGCGGCTCC TGAGGCTCCA GAGACGCGGC
101 TGGTGGATCA GTGTTGGGGC TGTTCTGCG GCGATGAGCC CGGGGTGGGC
151 AGAGAGGGGC TGCTGGGCGG GCGGAACGTG GCGCTCCTGT ACCGCTGCTG
201 CTTTGCGGT AAAAGACCACC CACGGCAGGG CAGCATTCTC TACAGCATGC
251 TGACCGAGCGC AAAGCAAACG TACGCGGCAC CGAAGGCGGCC CGAGGCAGC
301 CTGGGTCCGT GCTGGGGCTG TTCGTGCGGC TCTGATCCC GGGTGGGCAG
351 AGCAGGGCCTT CGGGGTGGGC GGCCCGTGGC ACTCCTGTAC CGCTGCTGCT
401 TTTGTGGTGA AGACCAACCG CGGCAGGGCA GCATCCTCTA CAGCTTGCTC
451 ACTAGCTCAA AGCAAACGCA CGTGGCTCCG GCAGCGCCCG AGGCACGGCC
501 AGGGGGCGCG TGGTGGGACC GCTCCTACTT CGCGCAGAGG CCAGGGGTA
551 AAGAGGCGCT ACCAGGGCGGG CGGGCCACGG CGCTTCTGTA CCGCTGCTGC
601 TTTTGCCTG AAGACCAACCC GCAGCAGGGC AGCACCCCT ACTGCGTGCC
651 CACGAGCACA AATCAAGCGC AGGCAGCTCC GGAGGAGCAG CCGAGGGCCC
701 CCTGGTGGGA CACCTCCTCT GGTGCGCTGC GGCGGGTGGC GCTCAAGAGT
751 CCACAGGTGG TCTGCGAGGC AGCCTCAGCG GGCGCTGTTGA AGACGCTGCG
801 CTTCGTCAAG TACTTGCCT GCTTCCAGGT GCTGCCCTG GACCAGCAGC
851 TGGTGCTGGT GCGCAACTGC TGGGCGTCCC TGCTCATGCT TGAGCTGGCC
901 CAGGACCGCT TGCAGTTCGA GACTGTGAA GTCTCGGAGC CCAGCATGCT
951 GCAGAAAGATC CTCACCAACCA GGCGGCGGGA GACCGGGGGC AACGAGCCAC
1001 TGCCCGTGCC CACGCTGCAG CACCAATTGG CACCGCCGGC GGAGGCCAGG
1051 AAGGTGCCCT CCGCCTCCCA GGTCCAAGCC ATCAAGTGCT TTCTTCCAA
1101 ATGCTGGAGT CTGAACATCA GTACCAAGGA GTACGCCTAC CTCAAGGGGA
1151 CCGTGCTCTT TAACCCGGAC GTGCCGGCC TGCACTGCGT GAAGTACATT
1201 CAGGGACTCC AGTGGGAAAC TCAGCAAATA CTCAGTGAAC ACACCAGGAT
1251 GACGCCACAA GGGCCCCATG ACAGATTCA GTAACTTAAT AGTACCCCTT
1301 TCCTGCTGAG ATTCAATCAAT GCCAATGTCA TTGCTGAAC GTTCTTCAGG
1351 CCCATCATCG GCACAGTCAG CATGGATGAT ATGATGCTGG AAATGCTCTG
1401 TACAAAGATA TAA
```

**Figure 7: Alignment of DAX-1 primers with
human DAX-1 cDNA, SEQ ID NO. 2**

```
1 TACCAAGGAGTACGCCTACCTCA 23
||| | | | | | | | | | | | | |
1356 TACCAAGGAGTACGCCTACCTCA 1378

20 TGCTCTTTAACCGGACGTG 1
||| | | | | | | | | | | |
1388 TGCTCTTTAACCGGACGTG 1407
```

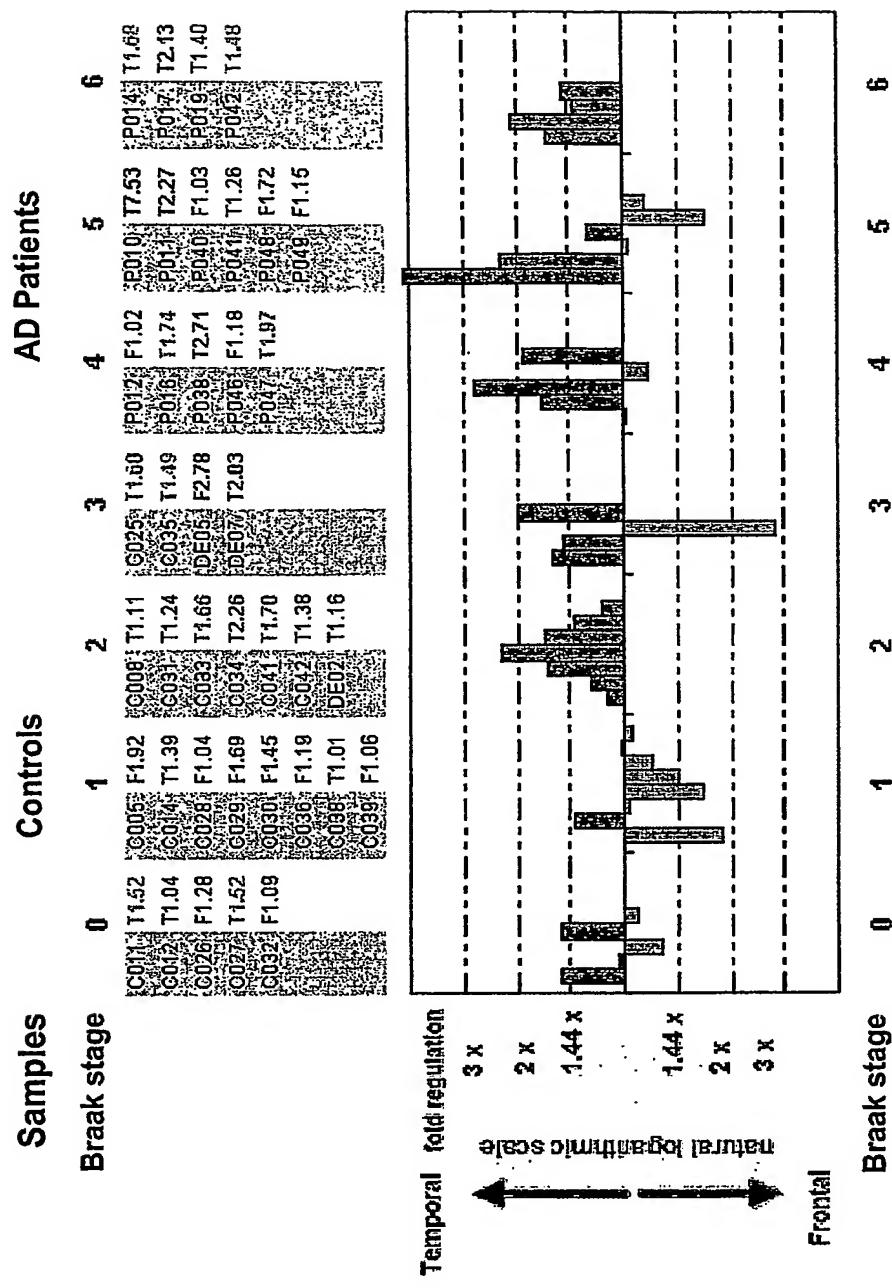
Figure 8 :

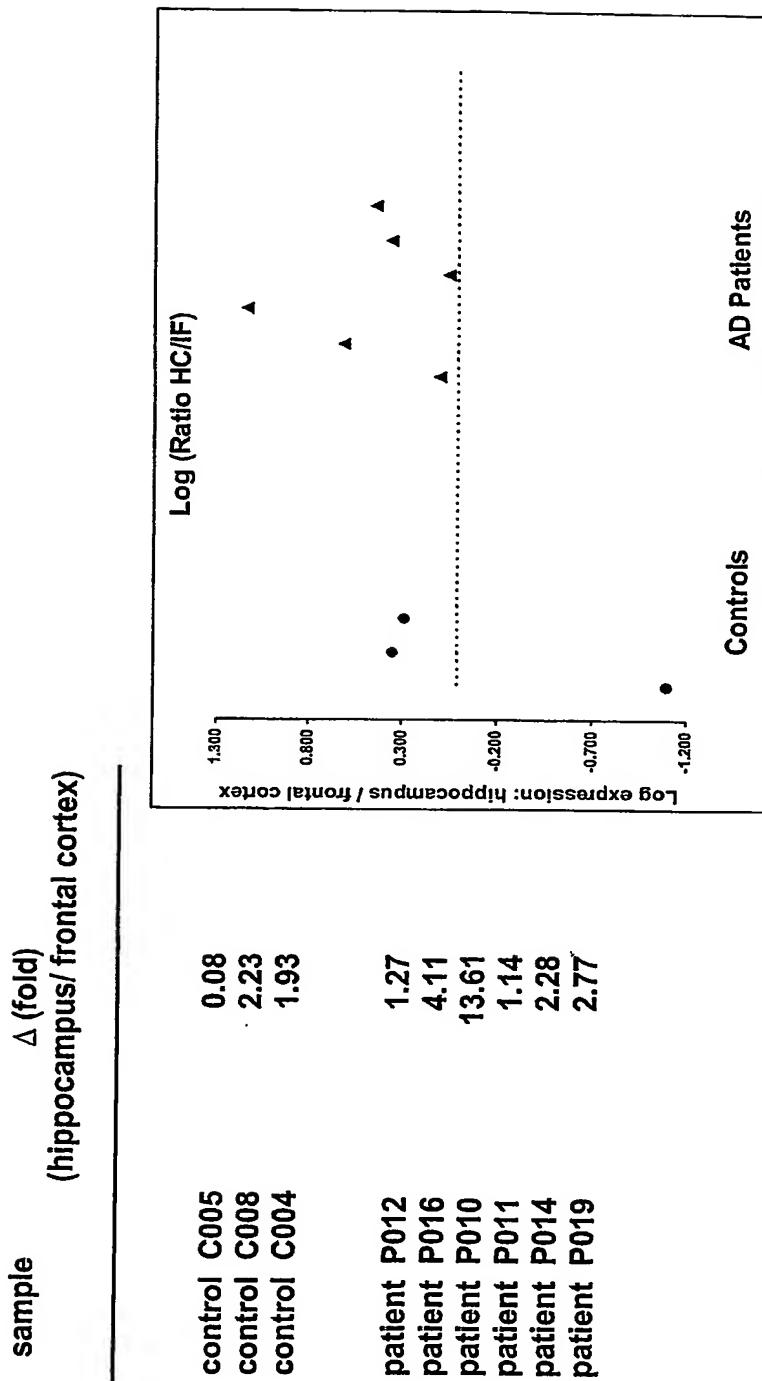
Figure 9 :

Figure 10: Western Blot of total human brain extracts labeled with anti-DAX-1 antibodies

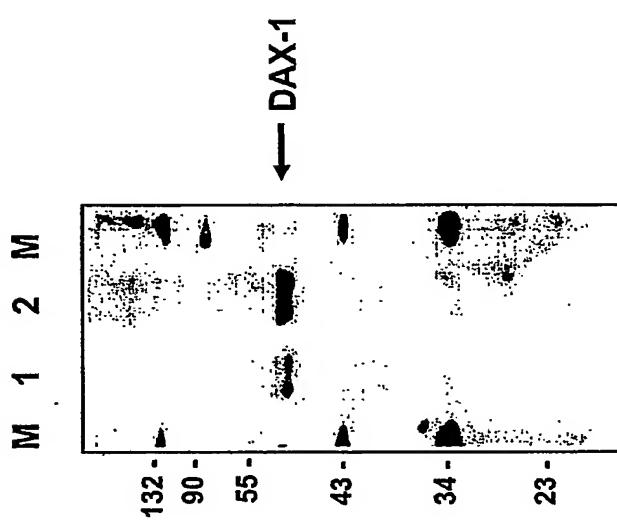


Figure 11: Images of human brain sections labeled with anti-DAX-1 antiserum and with DAPI

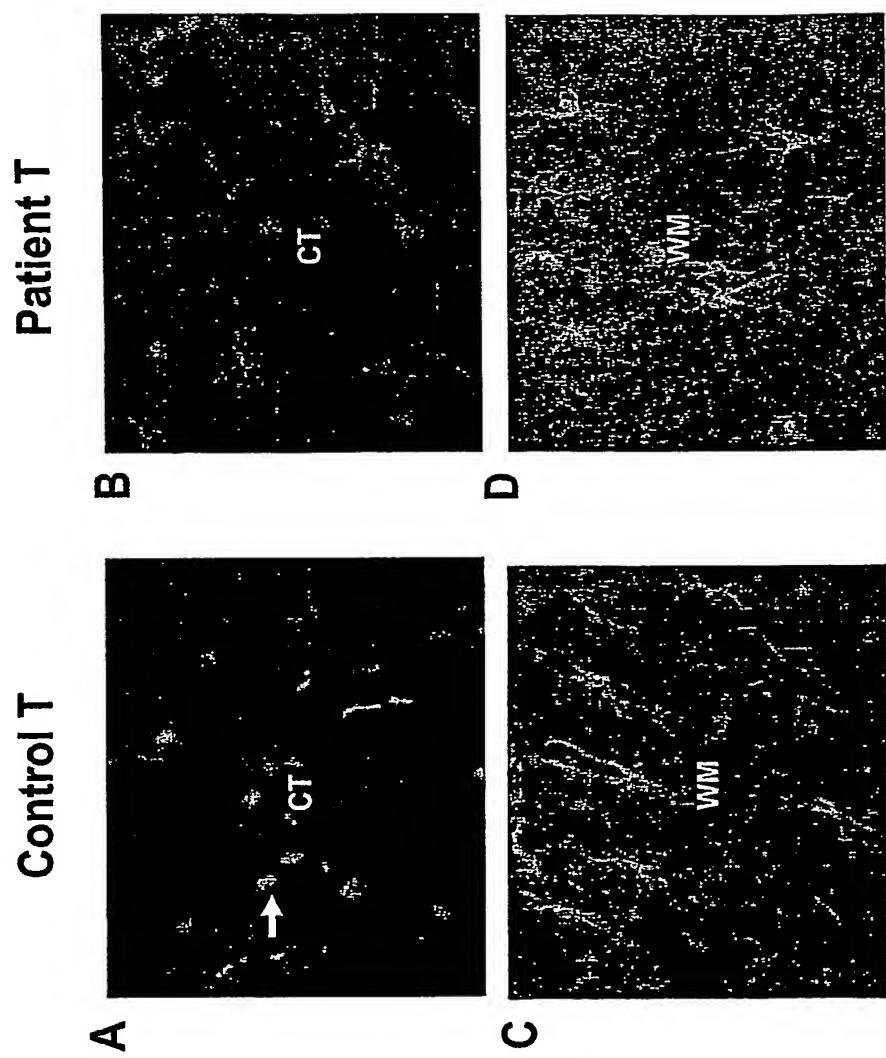


Figure 12: Immunofluorescence analysis of DAX-1 protein in neuroglioma cells

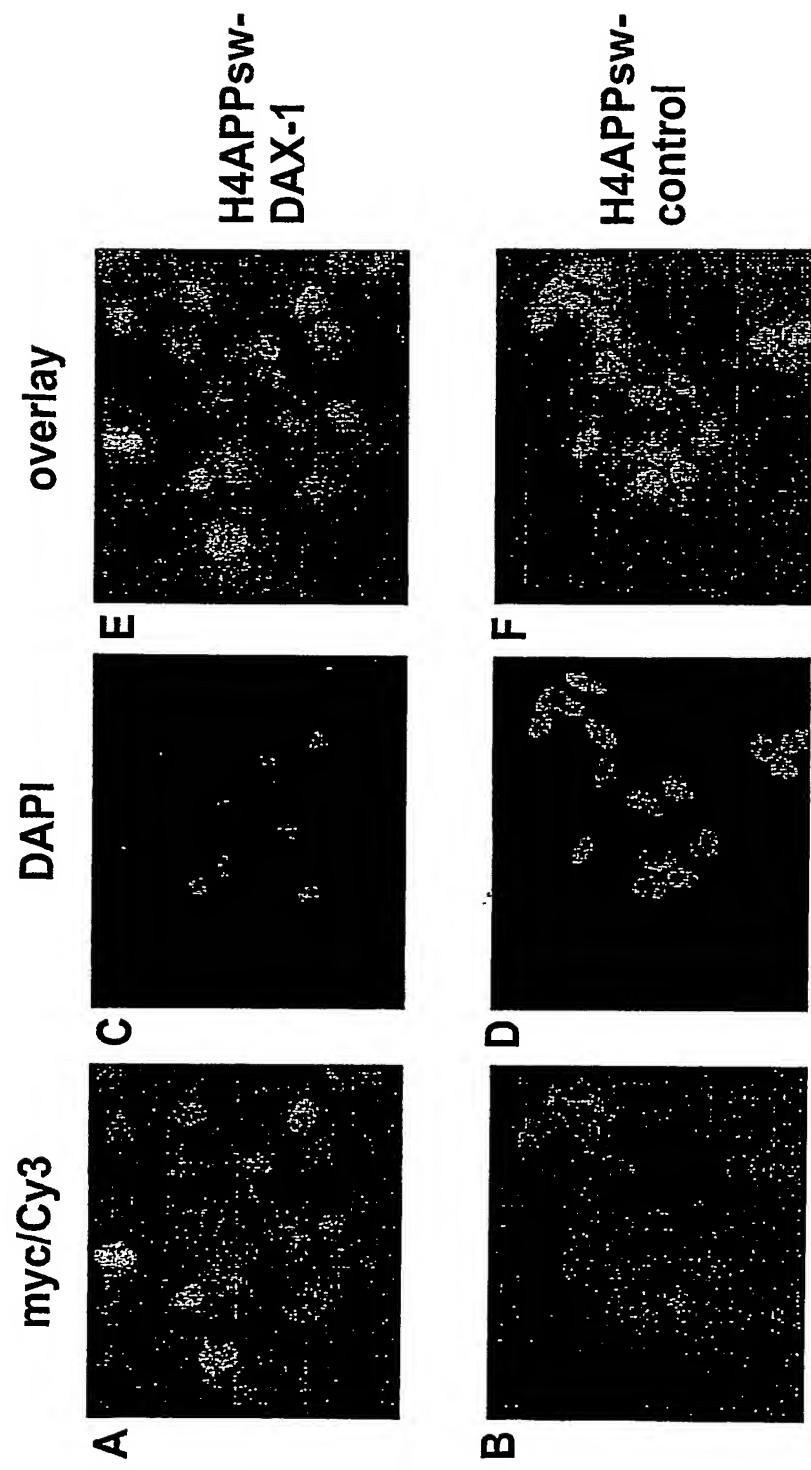


Figure 13: Effect of trophic factor deprivation on DAX-1 over-expressing cells

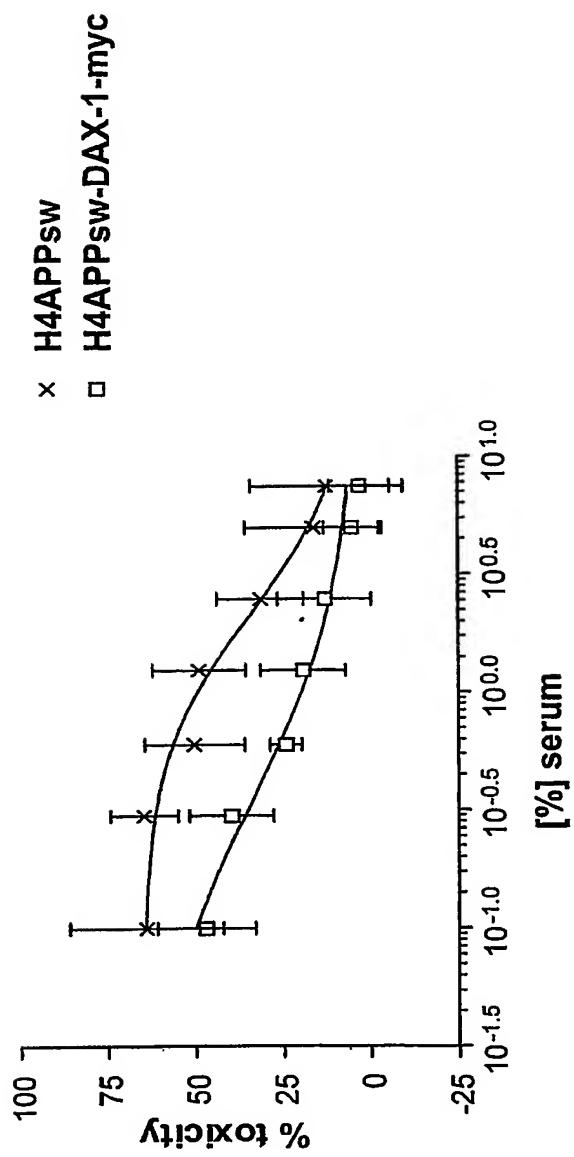
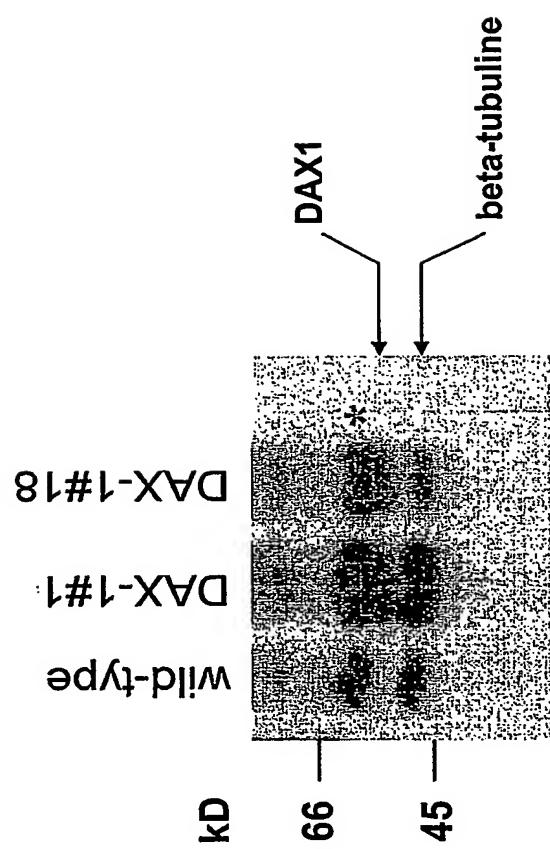


Figure 14: DAX-1 Protein expression in transgenic flies



**Figure 15: DAX-1 Protein expression in the retina
of adult flies**

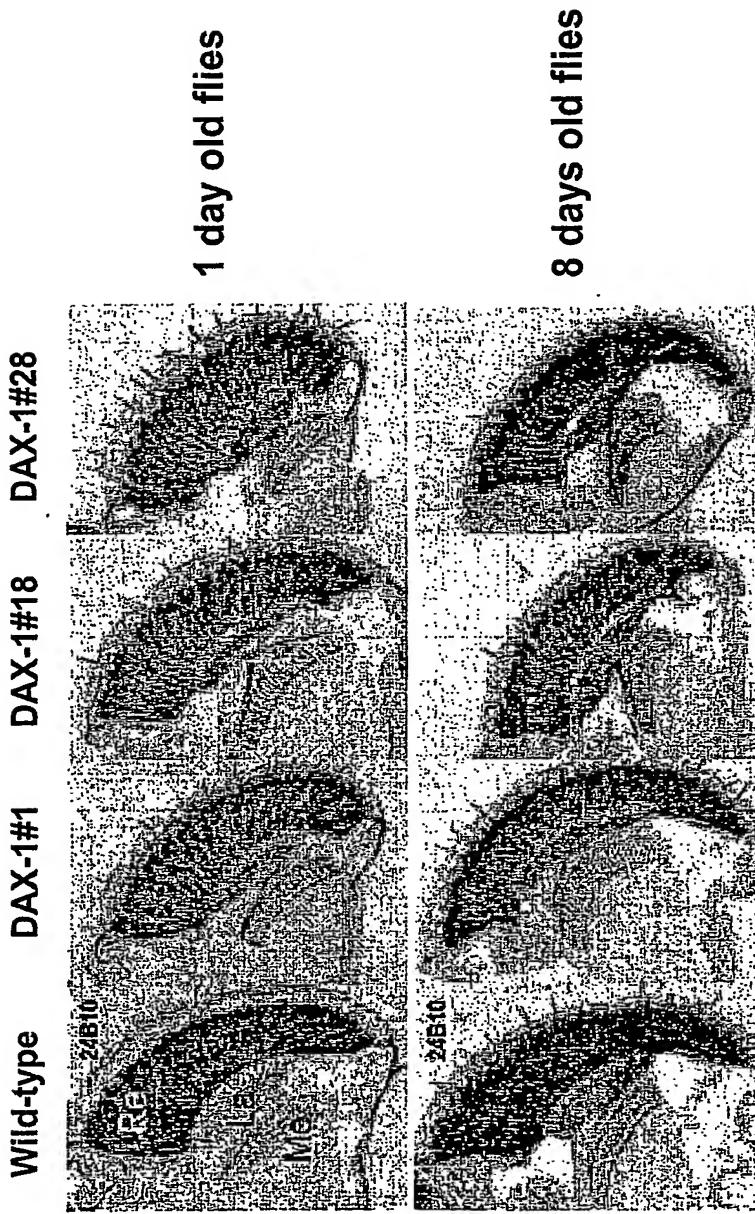
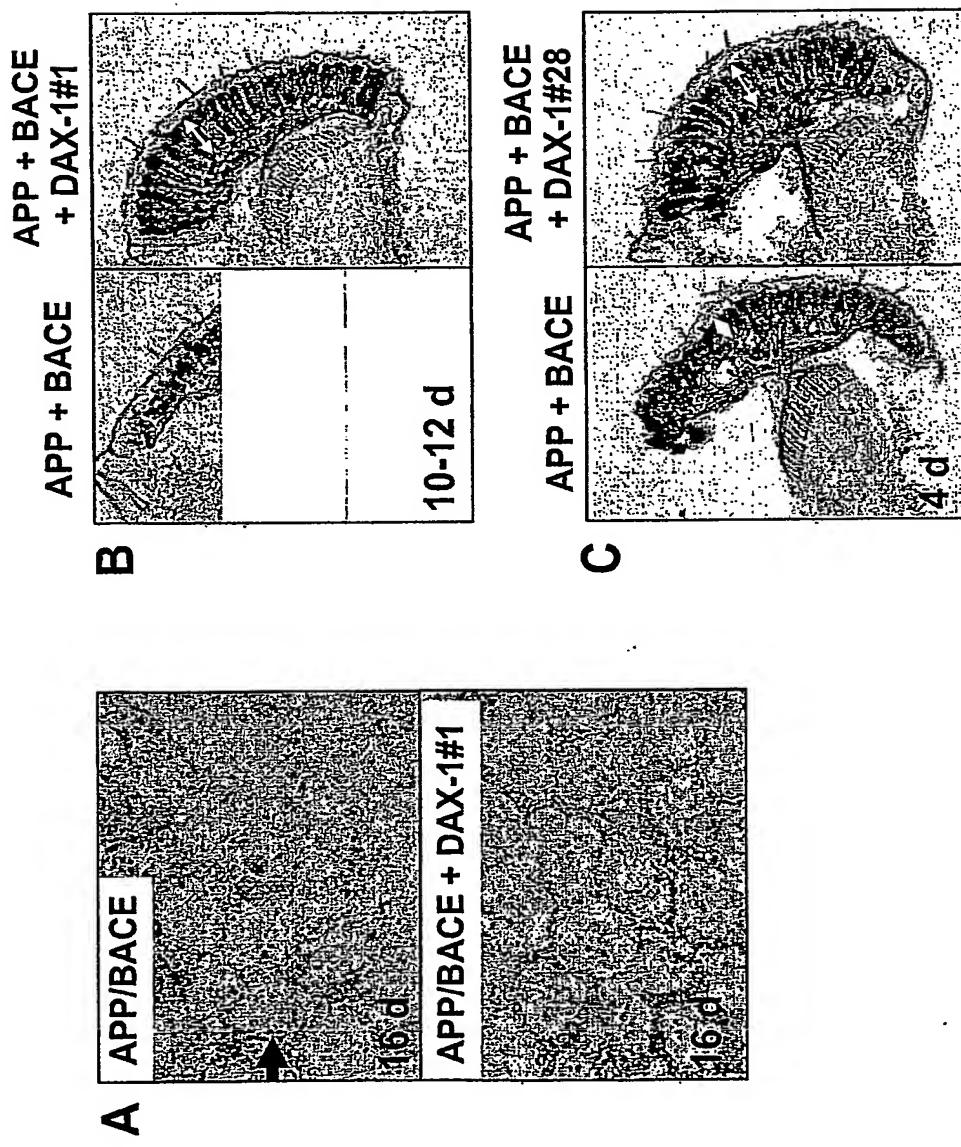


Figure 16: DAX-1 rescues photoreceptor cell degeneration induced by APP/BACE



**Figure 17: Thioflavin S positive amyloid plaques
in DAX-1 expressing flies**

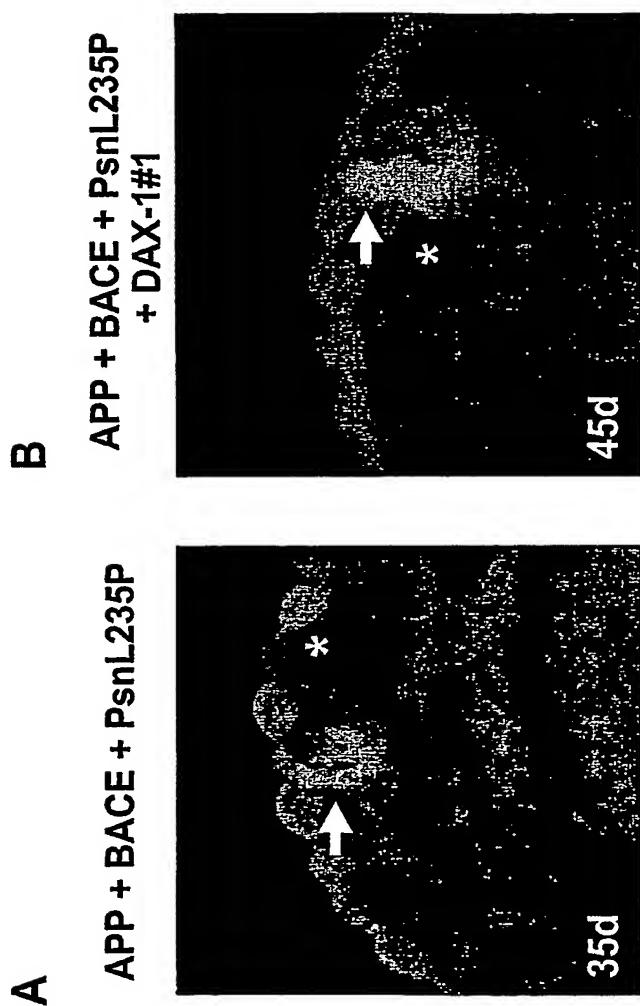


Figure 18: DAX-1 rescues photoreceptor cell degeneration induced by TAU

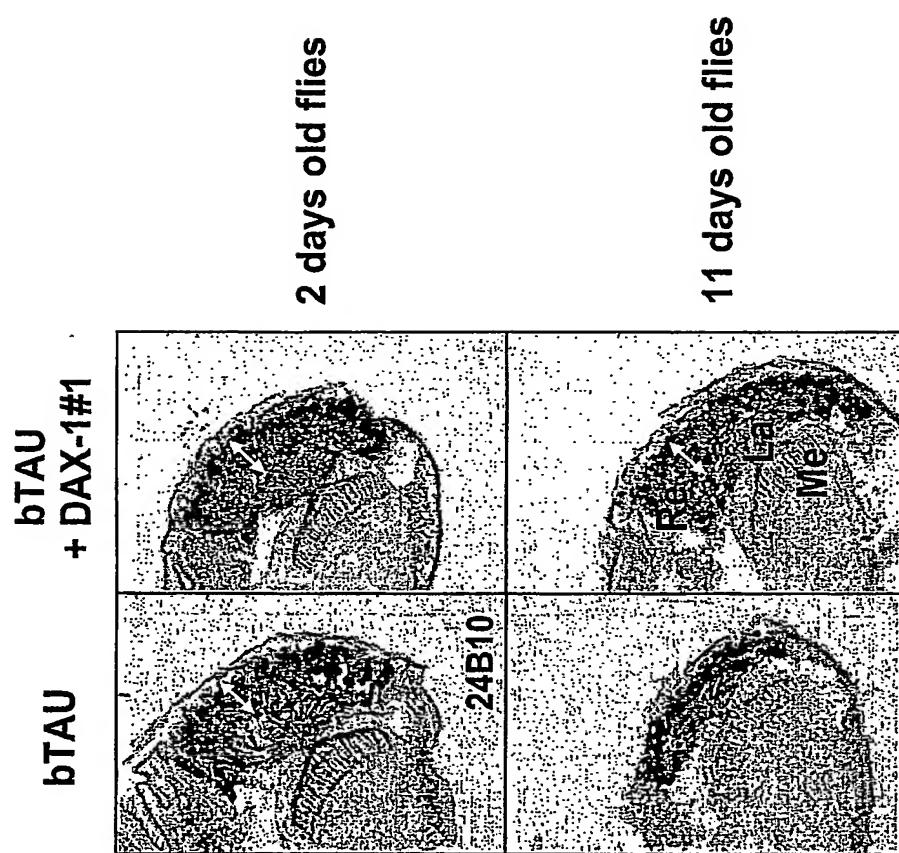


Figure 19: Generation of DAX-1 transgenic mice

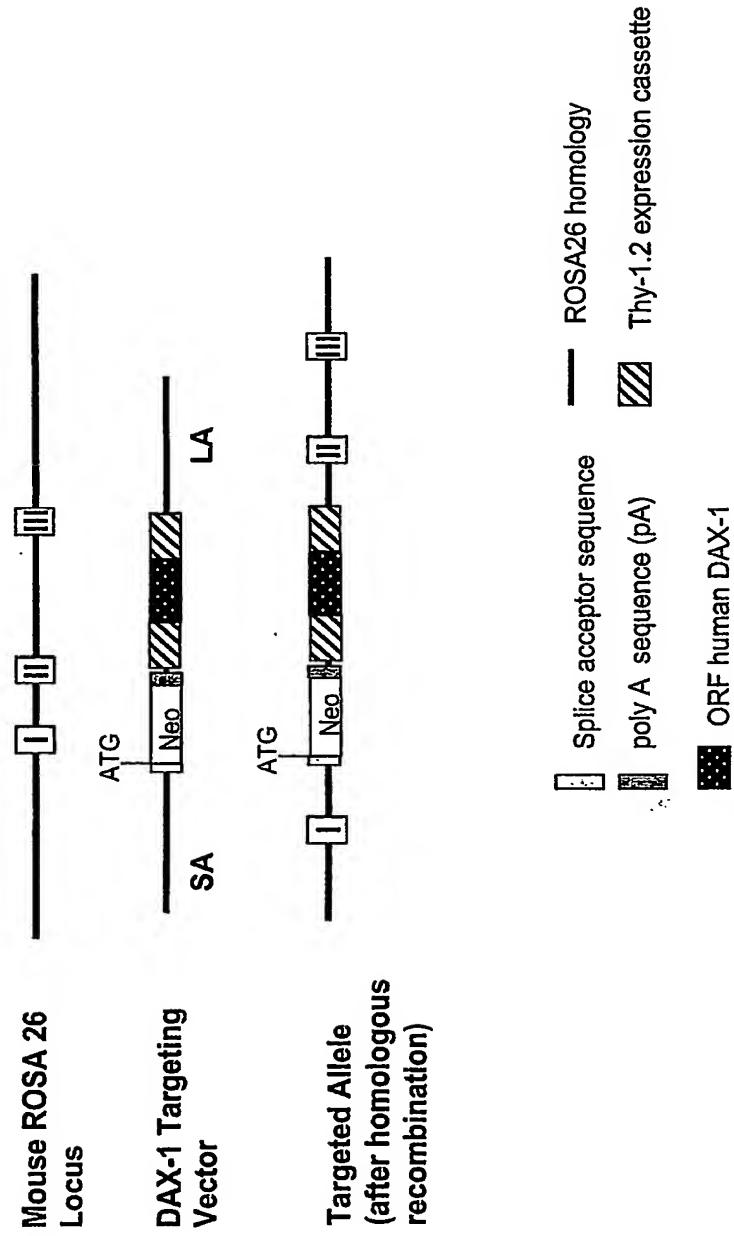
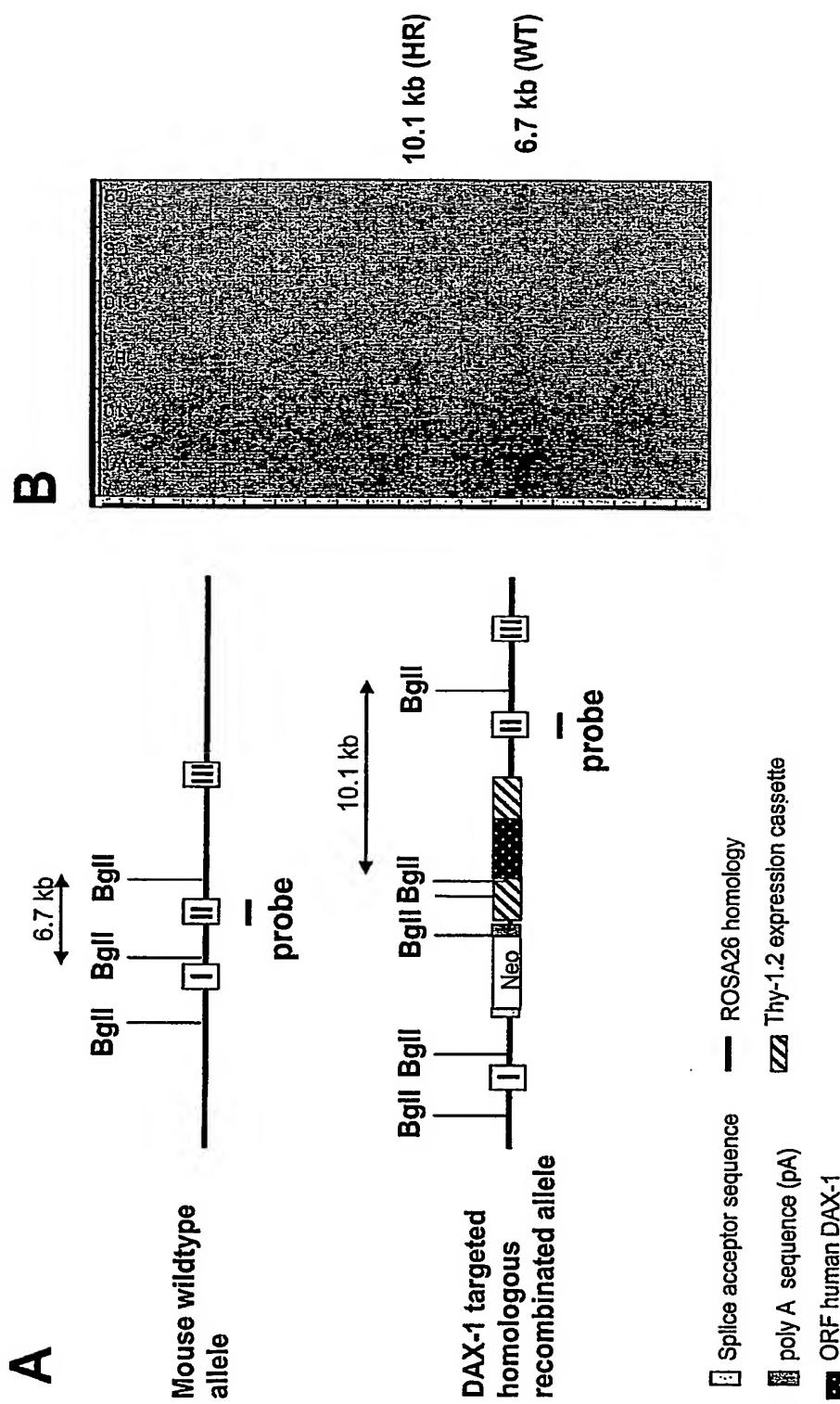


Figure 20: DAX-1 targeted ES cell clones



**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- BLACK BORDERS**
- IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**
- FADED TEXT OR DRAWING**
- BLURRED OR ILLEGIBLE TEXT OR DRAWING**
- SKEWED/SLANTED IMAGES**
- COLOR OR BLACK AND WHITE PHOTOGRAPHS**
- GRAY SCALE DOCUMENTS**
- LINES OR MARKS ON ORIGINAL DOCUMENT**
- REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**
- OTHER:** _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.